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NATURAL HISTORY
SURVEY

FIELDIANA • ZOOLOGY

Published by

CHICAGO NATURAL HISTORY MUSEUM

Volume 44

FEBRUARY 25, 1963

No. 18

A New Frog of the Genus *Kassina*
From Northern Rhodesia

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MUSEUM OF COMPARATIVE ZOOLOGY

While visiting Chicago Natural History Museum, I was asked by Dr. R. F. Inger to look at two specimens of *Kassina*, which he believed might represent an unknown species. This was also my impression, and comparison has confirmed the apparent differences. Dr. Inger has asked me to describe the new species, which I do gladly.

***Kassina ingeri*, new species**

Holotype.—A male, Chicago Natural History Museum no. 133011, from Kalaho, Barotseland, Northern Rhodesia. Collected February 16, 1962, by Richard Japp.

Paratype.—A female juvenal, CNHM no. 133007, same locality and collector. Collected December 6, 1961.

Diagnosis.—This species differs from all other *Kassina* in its large size (48 mm.; other species ca. 40 mm.), and in the ventral pigmentation pattern (never reticulate in other species).

Description of holotype.—General habitus stocky. Vomerine teeth present, between the choanae. Tongue heart-shaped, free behind. Head large, broader (18.2 mm.) than long (16.2 mm.). Snout rounded, longer (7.4 mm.) than high (6.2 mm.), somewhat projecting, longer than the eye (5.2 mm.), shorter than the distance between the front eye-corners (8.5 mm.). Eye-nostril distance (5.4 mm.) much longer than the internarial space (3.1 mm.) and than the distance between the nostril and the tip of the snout (2.8 mm.). Interorbital width (5.2 mm.) much greater than the internarial width (3.1 mm.) and the breadth of an upper eyelid (3.3 mm.). Canthus rostralis indistinct; loreal region flat. Tympanum distinguishable, but covered by the thick skin which forms a fold from the posterior

Library of Congress Catalog Card Number: 63-14124

corner of the eye to the front leg, nearer the eye than the commissure. Anterior limbs long; fingers moderate. No terminal discs. Third finger (6.5 mm., without metacarpal) shorter than the snout (7.4 mm.). Well-developed subarticular tubercles. Toes moderate, with a poorly developed web. Phalanges free: 1 (2)—2 i (2)—2 e ($1\frac{1}{2}$)—3 i (3)—3 e (2)—4 i ($3\frac{1}{3}$)—5 (2). First and second toes free; fifth toe as long as third toe. External metatarsals fused. Internal metatarsal tubercle (2.5 mm.) well developed; external metatarsal tubercle absent. No folds or tubercles on the tarsus.

Tibio-metatarsal articulation hardly reaching axillas. Thigh (17.6 mm.) longer than the tibia (16 mm.), which is 2.54 times longer than broad (6.3 mm.), shorter than the foot (20.4 mm.), and is contained three times in the snout-vent length.

Skin smooth on the back, folded on the throat, coarsely granulated on the belly. The vocal sac has about the same structure as in *Kassina senegalensis*. However, the median part is not strap-like; it is well delimited by a border, not only on the sides but also in front, and so has much the appearance of a gular disc, as in *Afrizalus*. The wrinkled skin on the sides is less wrinkled than in *K. senegalensis*, and thus not likely to be as largely inflated.

Coloration (in alcohol) of back almost uniformly blackish, with some hardly distinguishable darker spots, none of which stretches along the mid-dorsal region. Belly pale yellowish with a grayish network between the granules of the skin. Ventral parts of the limbs yellowish, marbled with gray or black. Throat blackish.

Paratype.—The paratype is a young female (37 mm.), rather poorly preserved, with a bony excrescence on the exterior side of the right forearm. The dorsal markings are more distinct than in the holotype. The ventral markings are, on the contrary, less conspicuous than in the male: a very faint remnant of reticulation or marbling except below the tibia, where the marbling is beautifully distinct. Throat yellowish with a broad and weak marginal infuscation.

Discussion.—The dorsal spot pattern in *Kassina ingeri* is quite obviously different from that of the sympatric *K. senegalensis angeli* Witte as well as from that of any other race of this species; it is also different from *K. weali* Boulenger or *K. wittei* Laurent, whose ranges are not far away. The dorsal pattern is indeed like that of *Kassina maculosa* (Sternfeld) (including *maculata* Parker and *decorata* Angel), and also resembles somewhat *K. mertensi* Laurent. These species, however, do not have a ventral network, and their



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FIG. 25. *Kassina ingeri*, new sp. Holotype, CNHM 133011. Slightly enlarged.

dorsal spots are more conspicuous. Moreover, certain ratio characters permit one to distinguish them from *K. ingeri* very easily (see Table).

COMPARISON OF THREE FORMS OF *KASSINA*

(Ratios given in percentages)

	<i>ingeri</i>	<i>mertensi</i>	<i>maculosa</i> (sensu lato)
Tibia/snout-vent.	33-34	43.5	35-37
Forearm/snout-vent.	19-20	33.3	25-28
Third finger/snout-vent.	12.5-13.3	18.8	16.5-19.5
Tarsus/snout-vent.	19-21	25.2	22.5-26
Width of an upper eyelid/inter-orbital space.	53-62	86	67-69
Foot.	longer than tibia	shorter than tibia	as long as tibia or a little longer
Digital disks.	none	well-developed	small

Acknowledgments.—I am very grateful to Dr. R. F. Inger for having given me the opportunity of describing this interesting form. My thanks also go to the National Science Foundation whose grant (NSF G17144) supports the studies of which this is a part. I am grateful also to Mr. N. Strekalovsky, who has provided the excellent figures which illustrate this paper.

I wish also to express my thanks to Dr. E. E. Williams, who has done me the kindness of reading and correcting my manuscript and who has endeavored to help me in every way since I have been at the Museum of Comparative Zoology.

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